big fucking cock

introduction

Let's face it. This universe fucking sucks because the shitty temporal dimension gets to be *the same* yet *different* from the spatial ones. More specifically, it's orthogonal but runs in the other direction. So we're stuck with picking between three popular metric conventions in special relativity. Or four if you're a goddamn masochist. At least we've managed to run it down to two these days.
The conventions are the so called mostly plus, mostly minus and uhh idk if the third one has a name, but time is imaginary. Re: masochism, go for it, make time real and space imaginary, i'm sure it'll work out. Anyway, they simply reflect what gets the minus sign, either time or space.
So it's a real fucking mess when there's this difference as the different sign propagates forward into all calculations that involve any sort of index switching or contraction or other shit.
Oh yea there's also the fucking dirac gammas. Like good fucking luck following that and converting back and forth, you gotta keep the spacetime metric in mind and then the spinor metric...just agh.

In any case, there's very few texts that show some awarness about this discrepancy and/or some sort of a conversion table/system. So I'm creating this.

Also keep track of gammas, because as it turns out it's not enough that the spacetime metric ain't agreed upon, also the fucking dirac matrices aren't, even within the realms of the same metric. And I don't just mean pick a weyl/mayo/dirac set, make sure you pick a good spinor metric too....in any case, here goes shit.

PS: just to be clear my *presonal* preference is that of mostly plus, but i'm also not stuck up enough to feel superior. Any comments I ever made about the other metric were in jest. Just because my choice is superior doesn't mean the other is bad winkyface joy 100 fire.

Part I
Mostly Plus

$$g_{\mu\nu} = \begin{pmatrix} -1 & & & \\ & 1 & & \\ & & 1 & \\ & & & 1 \end{pmatrix}$$

1 Lagrangians

1.1 Spin-0

$$\mathcal{L} = -\frac{1}{2}\partial^\mu\phi\partial_\mu\phi - \frac{1}{2}m^2\phi^2 \tag{1}$$

2 Burgess, Moore - Standard Model Primer